

**Objective:** At the end of this lab session you should be able to write the SELECT command with the WHERE clause and ORDER BY clause for single table queries.

## Section 1

SELECT command is used to retrieve data from the database tables. The syntax of the basic SELECT command is given below.

Syntax:

```
SELECT column1, column2,  
FROM table_name;
```

WHERE clause is used to filter out the results according to our requirements and different conditions. The syntax of a query with the WHERE clause included is given below.

Syntax:

```
SELECT column1, column2,  
FROM table_name  
WHERE condition;
```

We can use the following Relational operators to define the conditions in the WHERE clause.

=, != or <>, >, <, >=, <=

Ex:

Select sname from Student where CID = 'IT';

Select cname from Course where fees > 100000;

Also, we can use the following keywords in the WHERE clause.

AND, OR, BETWEEN, NOT BETWEEN, IN, NOT IN, IS NULL, IS NOT NULL, LIKE, NOT LIKE

Ex:

Select SID, sname from Student where CID = 'IT' OR DOB < '3/5/1999';

Select \* from Student where address IS NULL;

Table 1 given below defines the operators and keywords that can be used in the WHERE clause

| Operator | Description   |
|----------|---|
| =        | Equal   |
| >        | Greater than  |
| <        | Less than   |
| >=       | Greater than or equal   |
| <=       | Less than or equal  |
| <>       | Not equal. Note: In some versions of SQL this operator may be written as != |
| BETWEEN  | Between a certain range   |

|      |  |
|------|--|
| LIKE | Search for a pattern   |
| IN   | To specify multiple possible values for a column                   |
| AND  | displays a record if all the conditions separated by AND are TRUE  |
| OR   | displays a record if any of the conditions separated by OR is TRUE |
| NOT  | NOT operator displays a record if the condition(s) is NOT TRUE     |

Table 1: Operators and keywords in WHERE clause

**Exercise**

- Find all information about the students.
- Find the module name and the no of credits for a module.
- Find students whose name start with letter 'A'.
- Find the names of the students who were born before 1996/01/01.
- Find name and NIC of students who are from 'Colombo' District.
- Find the students whose names are starting from 'K' and following 'DS' course.
- Select the students who are following either 'DS' or 'IT' courses.

## Section 2

The ORDER BY clause in SQL is used to sort the results of a query. It sorts the result in ascending order by default. To sort the records in descending order, we use the DESC keyword.

Syntax:

```
SELECT column1, column2, ...  
FROM table_name  
ORDER BY column1, column2, ... ASC|DESC;
```

Exercises

- a. Select all the students sorted by the sname column.
- b. Select all students from the "Student" table, sorted DESCENDING by the "NIC" column.
- c. Select all students from the "Student" table, sorted ASCENDING by the "sname" column and descending by the "CID" column